

USN

--	--	--	--	--	--	--	--	--	--

10CV763

Seventh Semester B.E. Degree Examination, June/July 2016

Pavement Materials and Construction

Time: 3 hrs.

Max. Marks: 100

Note: Answer FIVE full questions, selecting at least TWO questions from each part.

PART – A

- 1 a. Explain briefly the desirable properties of road aggregates. (06 Marks)
b. List the various tests conducted on road aggregate the order to ascertain its suitability and indicate the desirable values of the test results. (08 Marks)
c. Mention why aggregate proportioning is required. Explain the Routhfutch's method of proportioning materials. (06 Marks)
- 2 a. List the various tests conducted on bitumen. Explain any two tests with neat sketches. (08 Marks)
b. Explain briefly the manufacturing process of tar. (06 Marks)
c. What are the requirements of bitumen used for road work? (06 Marks)
- 3 a. What are emulsions and cutbacks? How are they prepared? Mention under what condition they are used. (10 Marks)
b. What is adhesion failure? Briefly explain the mechanism of stripping of bituminous binder and mention the methods of improving adhesion. (10 Marks)
- 4 a. What are the desirable properties of bituminous mixes? Mention the steps followed for the design of bituminous mix. (08 Marks)
b. Explain briefly Marshall method of bituminous mix design. (08 Marks)
c. Define dense and open textured mixes. (04 Marks)

PART – B

- 5 a. List the various equipments used in earthwork. Explain the working principle of (i) power shovel, (ii) Grader and (iii) Sheep footed roller. (10 Marks)
b. List the special equipments used for the construction of bituminous and cement concrete pavements, and explain any one equipment for each. (10 Marks)
- 6 a. Briefly explain the significance of subgrade soil. Enumerate the steps followed in the construction of embankment. (10 Marks)
b. Explain briefly the preparation of subgrade and quality control checks for subgrade. (10 Marks)
- 7 a. Explain the materials specification and construction steps for the construction of bituminous concrete pavement. Also mention the quality control checks. (10 Marks)
b. What are the functions of prime coat, tack coat and seal coat in bituminous concrete pavement? Mention the material specification of each. (10 Marks)
- 8 a. Explain the steps involved in the construction of cement concrete pavement and list its quality control checks. (10 Marks)
b. Explain the necessity of providing various types of joints in cement concrete pavement. (06 Marks)
c. Compare flexible and rigid pavements. (04 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
2. Any revealing of identification, appeal to evaluator and/or equations written eg. 42+8 = 50, will be treated as malpractice.